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# Human Trafficking Identification among Nurse Practitioner Students During Objective Structured Clinical Examinations

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Human Trafficking Victim Identification among Nurse Practitioner Students During  
Objective Structured Clinical Examinations

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D.N.P., Leadership, University of Missouri- Saint Louis, 2019

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A Dissertation Submitted to The Graduate School at the University of Missouri-St.

Louis

in partial fulfillment of the requirements for the degree

Doctor of Nursing Practice with an emphasis in Leadership in Population Health

May 2019

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### **Abstract**

*Problem:* Human trafficking (HT) is a significant worldwide and domestic issue affecting all ages, races, and genders resulting in over 40 million victims globally. Nurse practitioners (NP) often unknowingly come into contact with victims of HT, however, few NP's have had formal education on the topic and may fail to recognize signs and risk factors. The purpose of this study was to initiate HT training for NP students.

*Methods:* A quality improvement (QI) initiative for a university college of nursing (CON) utilizing a prospective, observational, descriptive, cohort design. A plan-do-study-act (PDSA) methodology was implemented. A written case study given before an educational session and an objective structured clinical exam (OSCE) after the educational session involving a victim of HT were evaluated.

*Results:* Grading rubrics for the pre-education written case study were compared to the grading rubrics of the post-education OSCE's. A paired samples *t*-test found statistical significance ( $p < 0.05$ ) in score improvement between the pre-education written case study and the post-education OSCE, indicating awareness and recognition of a potential HT victim occurred.

*Implications:* Including HT education in an NP curriculum assisted students to become aware of and recognize signs and indicators of HT. Written case studies and use of an OSCE were an effective means for evaluating learning. As NP's graduate and begin to practice, further study on their awareness, ability to recognize risk factors and indicators, and providing assistance to victims of HT is recommended.

### Human Trafficking Victim Identification Among Nurse Practitioner Students During Objective Structured Clinical Examinations

Human trafficking (HT) is a significant worldwide and domestic issue, with an estimated 40.3 million victims of HT globally, and thought to be a \$150 billion industry worldwide (Polaris, 2018). People of all ages, races, and genders are at risk, and face many poor health outcomes related to their trafficking experience. Nurse practitioners (NP) often unknowingly come into contact with victims of HT, and may not be prepared to screen patients or know what resources and referrals to provide to their patients.

A person engaging in sex acts or labor services against their will by means of force, fraud or coercion is a victim of HT (National Institute of Justice, 2017). All genders, race, and ages are affected by HT throughout the world, including in the United States. This crime is defined in the United States by federal law as:

A commercial sex act induced by force, fraud, or coercion, or in which the person induced to perform such act has not attained 18 years of age. [And/or] The recruitment, harboring, transportation, provision, or obtaining of a person for labor or services, through the use of force, fraud, or coercion for the purpose of subjection to involuntary servitude, peonage, debt bondage, or slavery. (National Institute of Justice, 2017, para. 2)

Victims of HT are at daily risk for deterioration in their physical, emotional, and overall well-being. Information gathered by the Department of Health and Human Services (DHHS, n.d.) revealed victims of HT may experience a wide variety of physical health issues such as acquiring sexually transmitted infections (STI), suffering from injuries

incurred from abuse by their traffickers or performing work without proper safety equipment, and chronic health problems secondary to not receiving proper treatment for the health issues sustained during exploitation. Victims also may experience substance abuse problems related to coercion by their trafficker, and mental health issues such as anxiety, post-traumatic stress disorder (PTSD), and depression. (DHHS, n.d.)

The population of HT victims is diverse, however, there are factors associated with increased risk for individuals in the United States. Risk factors such as being a runaway child or from the child foster care system, poor socioeconomic status, have a history of sexual or domestic violence, homelessness, and those who have immigrated (especially those who are undocumented or do not speak English) have been identified to be at higher risk (Polaris, 2018). Awareness of risk factors allow those working in healthcare to have a heightened awareness to screen for HT, provide education, and intervention.

Healthcare providers interact with HT victims and often are unaware the person is being trafficked. Lederer and Wetzel (2014) found 87% (in over 100 survivors) of sex trafficking victims sought treatment for a health complaint from a healthcare provider during the time they were being victimized by HT. However, due to knowledge deficits and the inability of healthcare workers to identify potential victims of HT, most victims were not identified (Lederer & Wetzel, 2014). The aim of this project was to increase the nurse practitioner students (NP-S) awareness of risk factors for HT victimization, introduce a screening tool and questions to guide the NP-S in identifying indicators and teach the NP-S how to educate and provide resources for victims of HT. The outcomes sought were for the NP-S to recognize risk factors, utilize a screening tool, and provide

resources during an objective structured clinical examination (OSCE) with a standardized patient (SP). The PICO(T) questions for study were:

1. What was the mean of an NP-S's ability to identify risk factors or screen for HT in a written case study for a patient presenting to the clinic for a sports physical with multiple indicators for HT before an educational program about HT was given?
2. What was the mean of the identification of risk factors or screening for HT in an OSCE for a female patient presenting to the clinic for a sports physical after an exposure to violence and HT education program?

### **Review of the Literature**

A review of literature was completed using CINAHL database and Google Scholar. Key words/terms such as "Human Trafficking", "Human Trafficking Healthcare", "Human Trafficking Education", "Human Trafficking AND Nurse Practitioner", "Human Trafficking Training", "Human Trafficking Medicine", "Human Trafficking Screening Tool", and "OSCE" were used. Publications in the last five years (2013-2018) were included, but two publications from 2011-2012 were included due to their relevance to the topic. Publications prior to 2011 were excluded, with the exception of one publication in 2004 due to its applicability. Publications involving HT in the United States were preferred due to the differences in victim population and healthcare delivery systems in the U.S., however, one article on OSCE was selected from Spain. When searching for "human trafficking screening tool," four screening tools not specific to healthcare were found, some were multiple pages in length, did not apply to all ages/genders, or required organizational training, therefore the tools were not selected for

use. The HT screening tool found to be most applicable, The Medical Assessment Tool (Polaris,2010) was selected as there was a deficit in current relevant or validated screening tools. Eleven publications were ultimately chosen for this review. A gap in the literature was found as the majority of publications focused on sex trafficking, and more specifically child sex trafficking, rather than the broader scope of HT (including labor trafficking).

Several physical and mental health problems may occur as a result of HT. A systematic review conducted by Oram, Stockl, Busza, Howard, and Zimmerman (2012) addressed the prevalence of violence incurred while being trafficked; the prevalence of physical, mental and sexual health problems among those trafficked; and assessed risk of these co-morbidities. Results indicated females who experienced sex trafficking had consistently higher levels of violence (physical and sexual) inflicted upon them. In addition, a more frequent prevalence of physical, mental, and sexual health problems was found (Oram, et al., 20112). The most commonly reported physical complaints were headaches, back pain, stomach pain, and cognitive problems (Oram, et al., 2012). Oram, et al. (2012) recommended health care providers to have better screening modalities to identify victims when seeking aid for otherwise minor complaints.

Victims of HT seek treatment for various health conditions while being trafficked. Twelve female survivors of HT were interviewed regarding their interactions with healthcare providers during the time they were being trafficked, and of those surveyed, six had personally sought medical care for physical concerns while being trafficked, but were not asked or identified as a potential victim of HT (Baldwin, Eisenman, Sayles, Ryan, and Chuang, 2011). One respondent reported having worked in a hospital at the

time but was not recognized by other co-workers as a victim of HT herself. All twelve of the respondents reported having knowledge of victims who had sought medical treatment for something while being trafficked (Baldwin et al., 2011). Unfortunately, participation from survivors in HT research is uncommon as many survivors either opt to remain anonymous while working with HT support groups, do not seek any assistance with support groups, or find it too difficult to participate in such research due to mental health issues (such as PTSD). Baldwin et al. (2011) concluded HT victims do seek treatment for health conditions from healthcare providers while being trafficked, and recommended increased HT awareness, victim identification, and resources for recovery. Due to the prevalence of HT victims seeking healthcare during their experience as a trafficking victim, educating healthcare providers on the problem is important for recognizing and responding when warning signs are present.

There is not a consistent method of delivering education and training to NP-S on HT. In a meta-analysis of 27 studies regarding guidance for health professionals on HT, eight content areas were identified as major themes from the studies, including definition and scope, health consequences, victim identification, appropriate treatment, referral to services, legal issues, security, and prevention (Ahn et al., 2013). This study found a wide variety in the type and quality of education offered, and concluded “there is a clear need to develop, implement, and evaluate high-quality education and training programs that focus on human trafficking for healthcare providers” (Ahn et al., 2013, para 4). This study recommended education and training in professional schools, and ongoing HT education for healthcare providers (Ahn et al., 2013).



The use of a SP can be beneficial in the assessment of knowledge application among NP-S. The use of OSCE's in nursing programs may be the most thorough evaluation of a student's knowledge and practice methodology (Raurell-Torreda et al., 2018). An OSCE may provide insight into the student's future practice as the simulations are commonly experienced nursing practices. The OSCE allows students to interpret the cues given from the SP by demonstrating their ability to further assess and communicate with the patient (Raurell-Torreda et al., 2018). Decision making abilities may also be assessed from the information provided by the SP. The OSCE aids in the assessment of student knowledge and their ability to apply the knowledge in a simulated, real-life scenario (Raurell-Torreda, et al., 2018). Another study of the OSCE included the background of the examination, the purpose of this method, the potential for discrepancy in grading, and recommendations after analysis of inter-rater reliability (Dunbar, 2018). Dunbar (2018) discussed the use of OSCE to promote safer, more competent care among nurses in their practice, and corroborated clinical simulated experiences as a means to promote the application of clinical knowledge. Dunbar (2018) also examined the potential for discrepancies in grading between a live OSCE and a recorded OSCE. Using a descriptive, comparative design pilot study, Dunbar (2018) found grading a recorded OSCE lead to more fair, consistent, and reliable grading than grading a live OSCE.

Further, to evaluate the knowledge of HT among NP-S, Lutz (2018) used six categories: definitions, laws, prevalence, victim identification, treatment of victims, and referral to community resources. Utilizing a pre-test/post-test design, Lutz (2018) reported of 73 NP-S, only four had received some training on HT. This study provided recommendations on important information and resources for training development;

however, there were no recommendations for assessing the application of newly acquired knowledge other than a written test.

Knowledge of HT among third year medical students was studied by Weiss and Kiluk (2018) by presenting a written case study with multiple indicators of HT. The students were asked to provide a written summary of findings. Once completed, the students were given a pre-test on HT, followed by an hour presentation on HT, and then given a post-test (Weiss & Kiluk, 2018). They found only 10% of students identified HT as a differential in their case summary, and 74% of the students on pre-test reported they had not had previous training on the topic (Weiss & Kiluk, 2018). Information regarding educational material included in the training was not available, nor was information available regarding the application of knowledge after the training.

Grace, Ahn, and Macias Konstantopoulos (2014) discussed the need for HT training in medical school to address content for the US Medical Licensing Examination-Step 1. Grace et al. (2014) recommended the structure of this training to include the effects on victim health, indicators for trafficking, trauma informed interviewing, and resources. This education would ideally take place during first year and could include a physician-patient simulation or during a course on violence and abuse (Grace et al., 2014). In addition, Stoklosa, Grace, and Littenberg (2015) concurred with the need for HT education among healthcare professionals, explaining this was a human rights issue with training building from this foundation. They recommended training for healthcare professionals to include a victim centered, trauma informed approach, but be evidence-based and gender sensitive (Stoklosa et al., 2015). The training should be on prevention with screening for high risk factors such as a history of domestic violence, high risk

sexual behaviors among vulnerable populations, and homelessness. Training should also include identification of victims through screening and awareness of the barriers victims may have about disclosing. Finally, content should include treatment, especially for mental and physical health needs incurred from being trafficked (Stoklosa et al., 2015).

The act of HT is considered a human rights violation because trafficking interferes with a person's individual right to life, liberty, security, as well as their right to not be held in slavery or servitude as noted in the Universal Declaration of Human Rights (Office of the High Commissioner for Human Rights [OHCHR], 2006). Based on this, Hannibal, Eisenberg, and Heggenhougen (2004) discussed the importance of a human rights focus during medical school, recommending physicians be well versed on the social determinants of health such as violence, socioeconomic inequities, implicit bias, and discrimination. Forums such as grand rounds, lectures, and courses on subject matter relating to human rights were suggested (Hannibal, Eisenberg, & Heggenhougen, 2004).

A screening flow chart for HT was developed by Polaris (2010) for medical professionals. Further literature on the use and validity of this tool was not available, however, Polaris is a trusted organization within the HT community, and due to the lack of other published and validated screening tools, this tool might be the best option for screening. The medical professional assessment diagram included indicators for the medical professional to be aware of, and provided simple actions, such as addressing the patient's medical needs first, isolating the patient, simple yes/no questions to ask, and next steps depending on how the patient answers the yes/no questionnaire (Polaris, 2010).

Finally, The Joint Commission (TJC, 2018) convened an advisory to provide education for healthcare providers regarding a definition of HT, signs of HT, and what to

do if trafficking is suspected. In this advisory, the importance of health care providers understanding the crime and recognizing risk factors and indicators used to identify victims was included. Assisting HT patients may be difficult due to the exploiters threats against the victim and their family, and is complicated by trauma bonding, which is when a victim has bonded with the exploiter (TJC, 2018). This advisory provided a thorough list of warning signs, emphasized a victim centered response when trafficking was suspected, and provided considerations on how to keep the patient safe (TJC, 2018). The advisory recommended actions to keep staff aware and observant of the potential of interacting with HT victims, such as always using a facility approved interpreter, routine use of social history and domestic violence screening questions, ensuring staff were trained on when to alert security or law enforcement, and to have staff trained to provide appropriate resources and referrals for addressing immediate and long-term needs for the victim (TJC, 2018). The advisory has identified HT as an opportunity for health care providers to increase their knowledge and develop plans for possible interactions with victims.

## **Method**

### **Design**

This was a quality improvement (QI) initiative for the university college of nursing (CON) utilizing a prospective, observational, descriptive, cohort design. A plan-do-study-act (PDSA) methodology was implemented. The plan included a written case study (including history and physical) of an adolescent female seeking a sports physical being given to the NP-S on the first day of a three-day, on-campus “intensive” (November 28-30, 2018) after a morning educational session on performing a sports

physical. The NP-S were asked to identify neurologic, cardiovascular, musculoskeletal, or other risk factors; list differential diagnoses; request any other information they felt was needed; determine what diagnostics or screening tools they would use; and list any recommended referrals. The case study included risk factors and indicators of HT, and was later assessed for identification of risk factors for HT by faculty and the primary investigator (PI) using a grading rubric. An educational program about domestic violence, elder abuse, child abuse, and sexual assault was given on the afternoon of day one of the experience. On the morning of day three of the intensive experience, students were given education specific to HT. The afternoon consisted of students being recorded while performing a sports physical OSCE (with multiple indicators of HT and similar to the written case scenario). Students were observed on a video recording regarding their ability to perform a sports physical and their ability to assess HT risk factors, ask HT screening questions, identify HT indicators (e.g., SPs had a crown tattoo placed as a possessive marker and an indication of trafficking) and discuss HT by faculty and the primary investigator.

### **Setting**

The setting was a Midwestern, suburban, public university with a CON. The University is located in a metropolitan area with approximately three million urban and suburban residents. There are 44 hospitals in the city and surrounding metro area, and six nursing schools offering an NP program. The CON has over 800 undergraduate and 200 graduate nursing students. The Bachelor of Science in nursing to Doctor of Nursing Practice (BSN-DNP) program at the CON is an on-line program with required three-day intensive simulation experiences required at intervals throughout the program. Day three

of some intensives include a video-recording of student performance during an OSCE that is reviewed and discussed by the individual student and a faculty member.

### **Sample**

This was a convenience sample of a cohort of NP-S in the BSN-DNP graduate nursing program. The students were midway through the program and enrolled in their first, population-specific, diagnosis and management course. The aim of this intensive was to educate NP-S on the essential elements of a sports physical exam and to enhance their education on exposure to violence (e.g. child maltreatment, domestic violence, elder abuse, sexual assault, and HT). Students were required to complete a written sports physical case study at the beginning of the intensive and perform a sports physical OSCE (with indicators for HT) at the end of this intensive. Nearly forty students were in attendance. Inclusion criteria were BSN-DNP NP-S who were in attendance for the entire “intensive”. Exclusion criteria were any students who were not in attendance for the entirety of the intensive, or did not consent to having their video-recorded OSCE reviewed by the PI.

### **Approval Processes**

Approval from the DNP committee, the CON, the university institutional review board (IRB), and graduate school was obtained. Ethical considerations to this project included emotional discord related to the subject matter. To minimize this risk, a warning was given at the beginning of each day of the intensive. Students were allowed to refuse participation at any time. The benefits of this project included providing NP-S with a foundational understanding of a patient’s exposure to violence, common patterns of injury, risk factors and identification of HT, and knowledge of potential referral

resources. Other benefits included an effective training endeavor resulting in the application of this new knowledge in actual practice during residency and after graduation.

### **Data Collection/Analysis**

A pre-survey consisting of 10 questions to determine the demographic variables of age, gender, race, and years of RN experience was collected from the NP-S, who were given the option to participate. In addition a baseline assessment of HT training and identification was included in this survey. An educational program was presented by the faculty and PI to include the most recent recommended screening tool for HT from Polaris (Appendix A). All data was de-identified and coded. The software program IBM SPSS Statistics 23 was used. Descriptive statistics and a *t* test comparing the written case study and OSCE evaluations were utilized.

### **Results**

Of the students who consented to participate in this project ( $N=38$ ), three did not complete a demographic survey. The NP-S were primarily in the age range of 25-29 years ( $n=14$ , 40%), there were no students under the age of 25 ( $n=0$ , 0%), 30-34 years ( $n=6$ , 17%), 35-39 years ( $n=10$ , 28%), 40-44 years ( $n=1$ , 3%), 45-49 years ( $n=1$ , 3%), 50-54 years ( $n=2$ , 6%), 55-60 years ( $n=0$ , 0%), and over 60 years ( $n=1$ , 3%). The sample primarily identified as female ( $n=33$ , 94%), male ( $n=2$ , 6%). Race/ethnicity revealed Caucasian ( $n=22$ , 65%), African American ( $n=10$ , 29%), Asian ( $n=2$ , 6%), and one student did not answer this question. In addition, years of registered nurse (RN) experience ranged from less than four years ( $n=11$ , 31%), 5-9 years ( $n=15$ , 43%), 10-14 years ( $n=4$ , 11%), 15-19 years ( $n=2$ , 6%), 20-24 years ( $n=1$ , 3%), and greater than 25

years ( $n=2$ , 6%). Half of the NP-S in this sample rated themselves as having basic knowledge of HT ( $n=18$ , 51%), fewer rated themselves having very little knowledge ( $n=14$ , 40%), even fewer rated themselves as proficient ( $n=3$ , 9%), and no NP-S rated themselves as having no knowledge of HT. The majority of the NP-S reported not ever having HT training in the past ( $n=32$ , 91%), with very few having received training previously ( $n=3$ , 9%). Furthermore, 63% did not feel comfortable with identifying a victim of HT ( $n=32$ ), 83% ( $n=29$ ) did not know what resources were available for suspected HT victims, and 54% ( $n=19$ ) did not think they had ever encountered a patient who was a victim of HT (Appendix C). There were six incomplete video recordings of OSCE's as a result of premature discontinuation of the recording; therefore, these six students' results for the written case study and OSCE were excluded from data analysis. The HT grading rubric scores between the written case study and OSCE were compared ( $n=32$ ) utilizing a  $t$  test for a single sample mean. For the written case study, the values of the mean and standard deviation were 1.2188 and .90641, respectively. The OSCE mean was 2.6875 ( $sd= 1.76777$ ). The difference between the written case study mean and the OSCE mean was statistically significant at the .05 level ( $t= -4.537$ ,  $df = 31$ ) (Appendix D and E).

### **Discussion**

The exposure to violence education, including HT, improved the NP-S's ability to recognize and possibly screen for HT. Distinguishing between the effectiveness of the written case scenario and the OSCE was not the focus of this study, however, the written case study provided an opportunity to assess reasoning skills based on their knowledge base at that time, while the OSCE provided an opportunity for them to apply new



knowledge to a similar case two days later. The utilization of both methods for reinforcement and to assess knowledge, application, and reasoning appeared to be an effective strategy when evaluating a student's knowledge of and ability to perform a sports physical and to identify a victim of violence (specifically, HT) on someone who was scheduled for a routine primary care visit. Further study would be recommended to assess their improvement in ability to recognize, discuss, and refer victims of violence with the most appropriate resources for care of their physical, emotional, and psychological needs when they become licensed providers.

With the vast majority of students participating in this study having less than ten years of nursing experience and almost all reporting having never received training on HT, one can reasonably assume the topic is not currently addressed in most nursing programs. Education about HT and providing for simulation may allow students a safe environment to interact with a patient exhibiting HT indicators and has been demonstrated to be an effective means of training in this study. Adaptation of this structured education is encouraged to be incorporated into nursing programs, especially for advanced practice registered nurses (APRN).

In the pre-survey, six participants reported having had a patient who was a victim of human trafficking, as well as six participants stating they felt comfortable with providing resources. Further information from these participants regarding these interactions may have been beneficial to enhancing a future intensive. A recommendation for future study would be to investigation of a correlation between the type of nursing experience (e.g. home care, primary care, emergency care, hospital care, etc.) and understanding of HT; or population of focus in an APRN program (family,

women's health, mental health, or pediatrics) and ability to apply knowledge learned. During the educational part of the intensive, a brief overview of trauma informed care (TIC) was discussed. Including TIC into the pre-survey and evaluating this during the OSCE would be an additional recommendation for further study.

Limitations of this study included an unexpected campus closure on day two of the intensive. The planned itinerary for day two was a full-day workshop on HT, including role-playing and audience participation decision making with HT scenarios. Instead, a pre-prepared folder with screening tools and resources were provided to the NP-S along with a 1.5 hour modified presentation on HT conducted the morning of day three of the intensive. While results of this study with a modified version of the original plan for HT training were statistically significant, it would have been interesting to know what the result may have been had the NP-S had the full educational plan. Another recommendation for future application of this program would be to include the SP in the education of the topic. Being a very complicated topic, it would be beneficial for the SP to have more background on the relationships, trauma, and other factors a victim would be experiencing, to help guide their responses during the OSCE.

### **Conclusion**

An NP-S's ability to recognize, screen for, and provide resources for HT improved with an educational program and resulted in an observed behavioral change. The use of a written case study and a video recorded OSCE appeared to be effective methods of evaluating an NP-S's ability to recognize and screen for HT. In addition, the written case study and video recorded OSCE allowed the NP-S to self-evaluate their ability to assess and communicate a difficult topic. With the recent recommendations

from TJC regarding the importance and need for implementation of HT education, effective educational programs will be sought by academic institutions and healthcare facilities nationwide. An increase in identification and ability to assist victims of HT may result when healthcare providers are aware of and vigilant when assessing patients in any setting.

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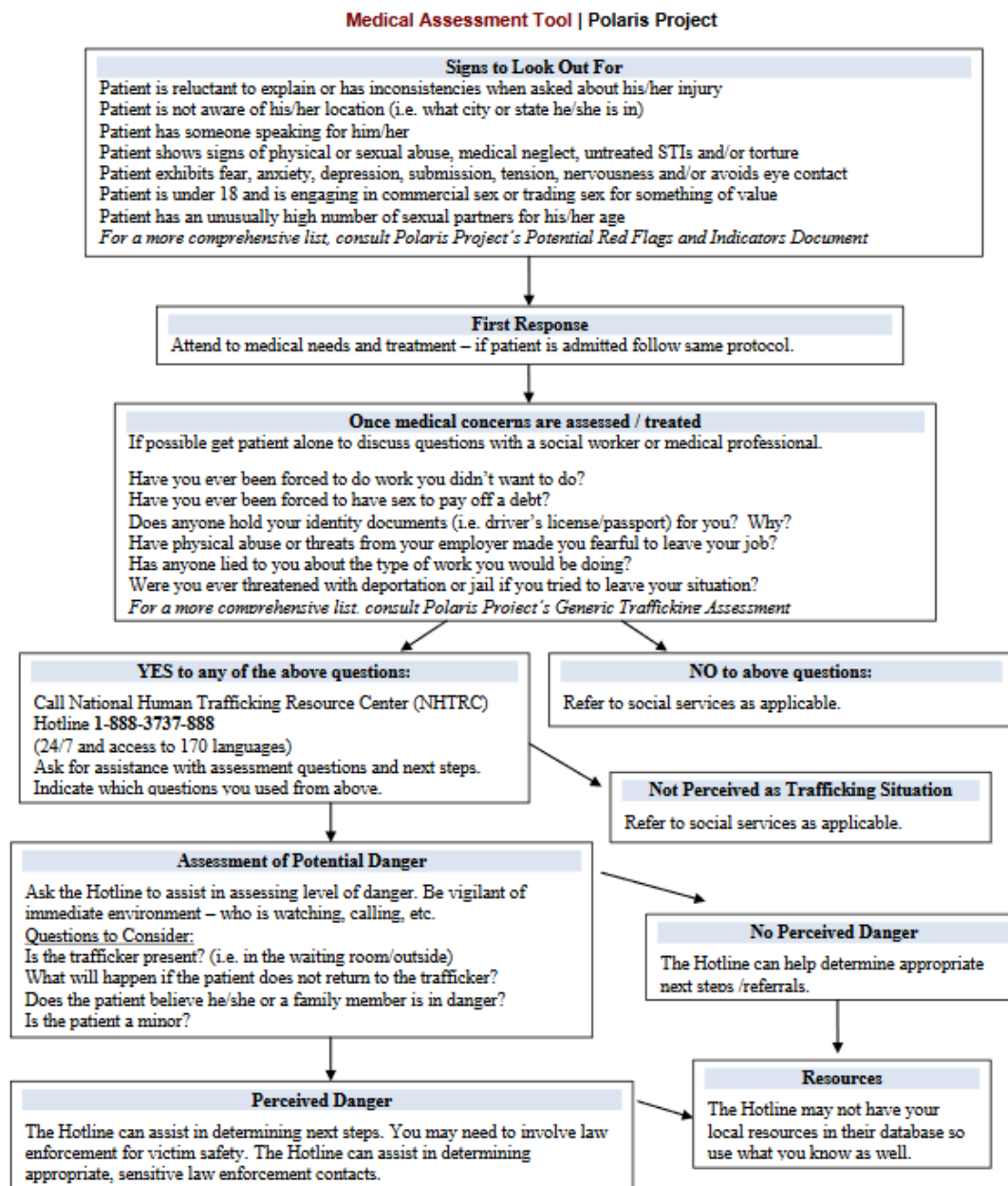
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## Appendix A

Figure 1. Polaris Project Medical Assessment Tool



This publication was made possible in part through Grant Number 90XR0012/02 from the Anti-Trafficking in Persons Division, Office of Refugee Resettlement, U.S. Department of Health and Human Services (HHS). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Anti-Trafficking in Persons Division, Office of Refugee Resettlement, or HHS.



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**Appendix B**Table 1. *Demographic Table*

<b>AGE</b>	<b><i>n</i></b>	<b>%</b>
20-24	0	0%
25-29	14	40%
30-34	6	17%
35-39	10	28%
40-44	1	3%
45-49	1	3%
50-54	2	6%
55-60	0	0%
60+	1	3%
<b>IDENTIFYING GENDER</b>		
MALE	2	6%
FEMALE	33	94%
<b>RACE</b>		
AA	10	29%
CAUCASIAN	22	65%
ASIAN	2	6%
<b>YEARS OF RN EXPERIENCE</b>		
0 to 4	11	31%
5 to 9	15	43%
10 to 14	4	11%



15 to 19	2	6%
20 to 24	1	3%
>25	2	6%

## Appendix C

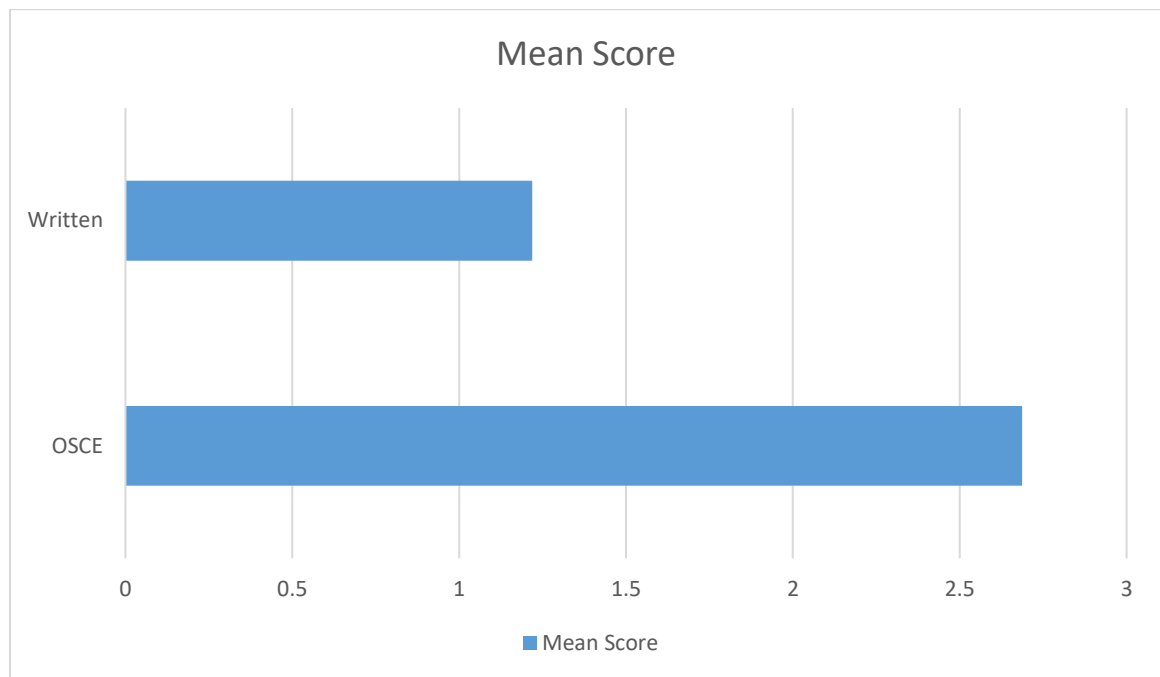
Table 2. *Other Information*

<b>CURRENT HT KNOWLEDGE</b>	<b><i>n</i></b>	<b>%</b>
NO KNOWLEDGE	0	0%
VERY LITTLE	14	40%
BASIC	18	51%
PROFICIENT	3	9%
<b>PAST HT TRAINING</b>		
YES	3	9%
NO	32	91%
<b>COMFORT WITH SUSPECTED HT IN A PT</b>		
YES	13	37
NO	22	63%
<b>RESOURCES</b>		
YES	6	17%
NO	29	83%
<b>ENCOUNTERED HT</b>		
YES	6	17%
NO	19	54%
I DON'T KNOW	10	29%

### Appendix D

Table 3. *Data Analysis Results*

	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>		
<b>Written Grade</b>	32	1.2188	0.90641		
<b>OSCE Grade</b>	32	2.6875	1.76777		
	<b>95% CI</b>	<b>95% CI</b>			
	<b>Lower</b>	<b>Upper</b>	<b>t score</b>	<b>df</b>	<b>Significance</b>
	-	-			
<b>Paired Samples Test</b>	2.12902	0.80848	-4.537	31	.000

**Appendix E***Figure 2. Mean Score Comparison*

The HT grading rubric scores between the written case study and OSCE were compared ( $n=32$ ) utilizing a  $t$  test for a single sample mean. For the written case study, the values of the mean and standard deviation were 1.2188 and .90641, respectively. The OSCE mean was 2.6875 ( $sd= 1.76777$ ). The difference between the written case study mean and the OSCE mean was statistically significant at the .05 level ( $t= -4.537$ ,  $df = 31$ ).